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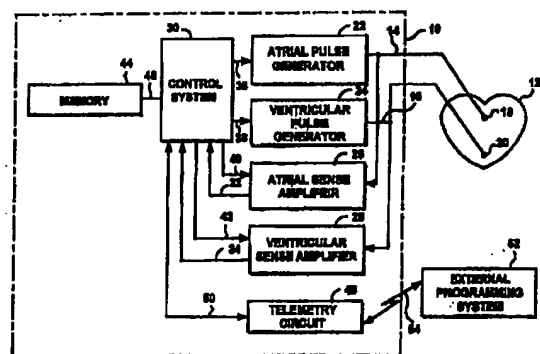
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(54) **Pacemaker**

(57) An implantable dual-chamber pacemaker programmed to operate primarily in an atrial tracking mode includes an atrial rate smoothing filter for producing a filtered atrial rate (FAR) from an intrinsic atrial rate. The pacemaker automatically switches its mode of operation from an atrial tracking mode (i.e., DDD, DDDR, VDD, VDDR, DDT or DDTR) to a non-atrial tracking mode (i.e., DDI, DDIR, VDI, VDIR, DDT or DDTR), in the event the filtered atrial rate exceeds a prescribed upper rate limit. Synchronously with this mode switch, the pacemaker automatically shortens a post ventricular atrial refractory period (PVARP) to a minimum, predefined or programmable value. In one embodiment, the shortened PVARP is set equal to a post ventricular atrial blanking period (PVAB) that ranges between approximately 50 msec and 200 msec. While in the alternate mode of operation, the pacemaker maintains the shortened PVARB refractory

period, and continues to monitor the FAR. As soon as FAR drops to a preset value or below, the pacemaker automatically switches back to its primary atrial tracking mode.

**FIG. 1**

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## EUROPEAN SEARCH REPORT

Application Number  
EP 00 30 2330

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (InCL7)
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Place of search <b>THE HAGUE</b>		Date of completion of the search <b>31 January 2001</b>	Examiner <b>Ferrigno, A</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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